

IN THE CLAIMS:

1. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn}\cdot\text{A}\cdot\text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, X indicates at least one kind of an element selected from the group consisting of N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a specific surface area of more than $1 \text{ m}^2/\text{g}$.

2. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a $\text{Cu K}\alpha$ radiation source, having a half width of more than 0.2° .

3. (Currently Amended) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern ~~obtained~~ obtained using a $\text{Cu K}\alpha$ radiation source, having a half width of more than 0.5° .

4. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu K α radiation source, having a half width of more than 1.0° .

5. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu K α radiation source, having a half width of more than 0.5° .

6. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu K α radiation source, having a half width of more than 1.0° .

7. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 500Å.

8. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 200Å.

9. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 100 Å.

10. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from 0.5 µm to 20 µm.

11. (Previously Presented) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from 0.5 µm to 10 µm.

12. (Previously Presented) An electrode material for an anode according to claim 1, wherein said transition metal element comprises at least one kind of an element selected from the group consisting of Cr, Mn, Fe, Co, Ni, Cu, Mo, Tc, Ru, Rh, Pd, Ag, Ir, Pt, Au, Ti, V, Y, Sc, Zr, Nb, Hf, Ta, and W.

13. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy contains said alloy in an amount of more than 30% by weight.

14. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy contains a binder comprising a polymer which is either water-soluble or water-insoluble.

15. (Original) An electrode material for an anode according to claim 14, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy contains said alloy in an amount in a range of from 80 % by weight to 100 % by weight.

16. (Original) An electrode material for an anode according to claim 14, wherein the amount of said binder contained is in a range of from 1 % by weight to 10 % by weight.

Claims 17 to 22. (Cancelled).

23. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn}\cdot\text{A}\cdot\text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, and X indicates at least one kind of an element selected from the group consisting of N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%, and wherein

said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy contains carbon element, and said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a specific surface area of more than $1 \text{ m}^2/\text{g}$.

24. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn}\cdot\text{A}\cdot\text{X}$, A indicates at least one kind of a element selected from the group consisting of transition metal elements, and X indicates at least one kind of an element selected from a group (a) consisting of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr; a group (b) consisting of rare earth elements; and a group (c) consisting of metalloide elements, wherein said group (b) consisting of rare earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu, and said group (c) consisting of matalloide elements consists of B, C, Si, P, Ge, As, Se, Sb, and Te, where the content of the constituent element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic% and said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ has a specific surface area of more than $1 \text{ m}^2/\text{g}$.

25. (Original) An electrode material for an anode according to claim 24, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy contains two kinds of elements selected from said group (a), said group (b), and said group (c).

26. (Original) An electrode material for an anode according to claim 24, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy contains three kinds of elements selected from said group (a), said group (b), and said group (c).

27. (Cancelled).

28. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a substantially non-stoichiometric ratio composition wherein in said formula $\text{Sn}\cdot\text{A}\cdot\text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, and X indicates, one kind of an element selected from the group consisting of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr and one kind of an element selected from the group consisting of rare earth elements [[in X]], wherein said group consisting of rare earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu wherein the content of the constituent element of element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%.

29. (Cancelled).

30. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$, A indicates at least one kind of a element selected from the group consisting

transition elements, and X indicates one kind of an element selected from the group consisting of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr and one kind of an element selected a group consisting of metalloide elements in X, wherein said group consisting of metalloide elements consists of B, C, Si, P, Ge, As, Se, Sb, and Te, where the content of the constituent element Sn of the amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy is $\text{Sn} / (\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%, and said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a specific surface area of more than $1 \text{ m}^2/\text{g}$.

31. (Cancelled).

32. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn} \cdot \text{A} \cdot \text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, and X indicates at least one kind of an element selected from the group consisting of metalloide elements and one kind of an element selected from the group consisting of rare earth elements, wherein said group consisting of rare earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu, and said group consisting of metalloide elements consists of B, C, Si, P, Ge, As, Se, Sb, and Te, where the content of the constituent element Sn of the amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy is $\text{Sn} / (\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%.

33. (Cancelled).

34. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn}\cdot\text{A}\cdot\text{X}$, A indicates one kind of an element selected from the group consisting of Co, Ni, Fe, Cr, and Cu, and X indicates one kind of an element selected from the group consisting of Si, Ge, Al, Zn, Ca, La, and Mg, where the content of the constituent element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%.

35. (Previously Presented) An electrode material for an anode according to claim 34, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy further contains one kind of an element selected from the group consisting of C, B, and P.

36. (Cancelled).

37. (Currently Amended) An electrode material for an anode according to any of claims 28, 32, 34[[,]] and 35 ~~and 40~~, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a specific surface area of more than $1 \text{ m}^2/\text{g}$.

38. (Currently Amended) An electrode material for an anode according to any of claims 1, 23, 24, 28, 30, 32, 34[[,]] and 35 ~~and 40~~, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a specific surface area of more than $5 \text{ m}^2/\text{g}$.

39. (Currently Amended) An electrode material for an anode according to any of claims 1, 23, 24, 28, 30, 32, 34[[,]] and 35 ~~and 40~~, wherein said amorphous Sn•A•X alloy contains Li element in an amount in a range of from 2 atomic % to 30 atomic %.

40. (Previously Presented) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous Sn•A•X alloy with a substantially non-stoichiometric ratio composition, wherein in said formula Sn•A•X, A indicates at least one kind of an element selected from the group consisting of transition metal elements, X indicates at least one kind of an element selected from the group consisting of, N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous Sn•A•X alloy is $\text{Sn}/(\text{Sn}+\text{A}+\text{X}) = 20$ to 80 atomic %, and wherein said amorphous Sn•A•X alloy contains at least one kind of an element selected from the group consisting of N and S in an amount in a range of from 1 atomic % to 30 atomic %.

41. (Previously Presented) An electrode structural body comprising said electrode material for an anode, containing said particulate comprising said amorphous Sn•A•X alloy defined in any of claims 1, 23, 24, 28, 30, 32, 34, 35, and 40 and a collector comprising a material incapable of being alloyed with lithium in electrochemical reaction.

42. (Cancelled).

43. (Original) An electrode structural body according to claim 41, wherein the amount of said particulate comprising said amorphous Sn•A•X alloy in said electrode structural body is at least 25 % by weight.

44. (Original) An electrode structural body according to claim 41, wherein said particulate comprising said amorphous Sn•A•X alloy in said electrode structural body contains at least 30 % by weight of said amorphous Sn•A•X alloy.

45. (Original) An electrode structural body according to claim 41, wherein said electrode structural body has an electrode material layer comprising said electrode material for an anode and a binder on said collector.

46. (Original) An electrode structural body according to claim 45, wherein said binder comprises a polymer which is either water-soluble or water-insoluble.

47. (Previously Presented) A rechargeable lithium battery having an anode, an electrolyte, and a cathode and in which oxidation-reduction reaction of lithium is used, characterized in that said anode comprises said electrode structural body defined in claim 41.

48. (Original) A rechargeable lithium battery according to claim 47, wherein said cathode comprises a lithium element-containing material having a function of

deintercalating lithium ion and intercalating said lithium ion in charge-and-discharge reaction.

49. (Original) A rechargeable lithium battery according to claim 47, wherein said lithium element-containing material as the constituent material of said cathode contains an amorphous phase.

50. (Original) A rechargeable lithium battery according to claim 47, wherein said lithium element-containing material as the constituent material of said cathode contains a metal oxide material containing amorphous phase.

51. (Previously Presented) A process for producing an electrode structural body for a rechargeable lithium battery, said process is characterized by having a step of arranging said electrode material for an anode containing said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy defined in any of claims 1, 23, 24, 28, 30, 32, 34, 35, and 40 on a collector.

52. (Original) A process for producing an electrode structural body for a rechargeable lithium battery according to claim 51, wherein said step includes a step of arranging said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy on said collector by way of press forming.

53. (Original) A process for producing an electrode structural body for a rechargeable lithium battery according to claim 51, wherein said step includes a step of preparing a paste material by mixing said particulate comprising said amorphous Sn•A•X alloy with a binder and arranging said paste material on said collector.

54. (Original) A process for producing an electrode structural body for a rechargeable lithium battery according to claim 53, wherein a binder comprising a water-soluble polymer material is used as said binder.

55. (Previously Presented) A process for producing a rechargeable lithium battery having an anode, an electrolyte, and a cathode and in which oxidation-reduction reaction of lithium is used, said process is characterized by having a step of forming said anode by arranging said electrode material for an anode containing said particulate comprising said amorphous Sn•A•X alloy defined in any of claims 1, 23, 24, 28, 30, 32, 34, 35, and 40 on a collector.

56. (Original) A process for producing a rechargeable lithium battery according to claim 55, wherein said step of forming said anode includes a step of arranging said particulate comprising said amorphous Sn•A•X alloy on said collector by way of press forming.

57. (Original) A process for producing a rechargeable lithium battery according to claim 55, wherein said step of forming said anode includes a step of preparing

a paste material by mixing said particulate comprising said amorphous Sn•A•X alloy with a binder and arranging said paste material on said collector.

58. (Original) A process for producing a rechargeable lithium battery according to claim 57, wherein a binder comprising a water-soluble polymer material is used as said binder.

59. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a CuK α radiation source, having a half width of more than 0.2° .

60. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a CuK α radiation source, having a half width of more than 0.5° .

61. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a CuK α radiation source, having a half width of more than 1.0° .

62. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said amorphous alloy has a peak in a range of $2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a $\text{CuK}\alpha$ radiation source, having a half width of more than 0.5° .

63. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of $2\theta = 40$ to 50° in X-ray diffraction pattern obtained using a Cu radiation source, having a half width of more than 1.0° .

64. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 500 \AA .

65. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 200 \AA .

66. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said particulate comprising said

amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 100 Å.

67. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from 0.5 µm to 20 µm.

68. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from 0.5 µm to 10 µm.

69. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous Sn•A•X alloy contains said alloy in an amount of more than 30% by weight.

70. (Currently Amended) An electrode material for an anode according to any of claims 23, 24, 28, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous Sn•A•X alloy contains a binder comprising a polymer which is either water-soluble or water-insoluble.

71. (Previously Presented) An electrode material for an anode according to claim 70, wherein said particulate comprising said amorphous Sn•A•X alloy contains said alloy in an amount in a range of from 80 % by weight to 100 % by weight.

72. (Previously Presented) An electrode material for an anode according to claim 70, wherein the amount of said binder contained is in a range of from 1 % by weight to 10 % by weight.

73. (Previously Presented) An electrode material for an anode according to claim 40, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a specific surface area of more than $1 \text{ m}^2/\text{g}$.

74. (Previously Presented) An electrode material for an anode according to claim 40, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a specific surface area of more than $5 \text{ m}^2/\text{g}$.

75. (Previously Presented) An electrode material for an anode according to claim 40, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy contains Li element in an amount in a range of from 2 atomic % to 30 atomic %.